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UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION.

NO. 67.

BULLETIN OF FOREIGN PLANT INTRODUCTIONS.

September 1 to 30, 1911.

NEW PLANT IMMIGRANTS.

(NOTE: Applications for material listed in this bulletin may be made at any time to this Office. As they are received they are filed, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it, as well as to others selected because of their special fitness to experiment with the particular plants imported.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.)

ACACIA ARABICA KRAUSSIANA. (Mimosaceae.) 31898. Seeds from South Africa. Presented by Prof. J. Burtt Davy, Government Agrostologist and Botanist, Pretoria, Natal. "Shrubs or small trees of which the pods are eaten by game and stock, much as is the case with the mesquit of the Southwest. They are native of the warm, dry, middle veld, below 4000 feet and are usually found in sandy or gravelly soils in regions where the rainfall is from 20 to 25 inches, falling in summer." (Davy.) For distribution later.

ANONA HAMATA. (Anonaceae.) 31891. Seeds from Mexico. Presented by Mr. C. B. Waite, Mexico City. "This fruit is not a very valuable one in my estimation although it is esteemed by the natives. It is fragrant, stringy, yellow, almost insipid, and will average in weight about three pounds; it has green skin turning brown when ripe, and ripens in August and September. The trees are about ten to fifteen feet high. The pulp of the fruit clings to the seed like the mango, but does not seem to have the strings growing out of the seed like the mango, but out of a sheath around the seed. It is common from Cordoba to Guatemala." (Waite.) This is a new species to be described elsewhere by Mr. W. E. Safford. For distribution later.

ANONA MURICATA. (Anonaceae.) 31880. Plants of the sour-sop from Redland Bay, Queensland, Australia. Presented by Mr. James Collins. For distribution later.

ANONA PALUSTRIS. (Anonaceae.) 31869. Seeds of alligator apple from Camaguey, Cuba. Presented by Mr. Robert L. Luáces, at the suggestion of Mr. G. P. Wilder, Honolulu, Hawaii. Introduced as a possible stock for the less hardy species of this genus. For distribution later.

ASPARAGUS FALCATUS. (Convallariaceae.) 31835. Seeds of asparagus from the Natal Botanic Gardens, Durban, Natal. Presented by Mr. J. Medley Wood, Director. An ornamental flowering climber with creamy-white sweet-scented flowers in large panicles. For distribution later.

BAMBOS SP. (Poaceae.) 31761. Seeds of bamboo from Lansdowne, United Provinces, India. Procured from the Lansdowne Forest Division Office by Mr. W. R. Mustoe, superintendent, Botanic Gardens, Lahore, India, and presented by him through Mr. R. S. Woglum of this Department. Introduced for the work of this Office in the trial of suitable bamboos for cultivation as an important timber supply in the Southern States. For distribution later.

CARISSA SPP. (Apocynaceae.) 31840-841. Seeds of two species of Carissa from the Natal Botanic Gardens, Durban. Presented by Dr. J. Medley Wood, Director. Carissa bispinosa and C. grandiflora, introduced for the work of this Office in extending the cultivation of these important home garden fruits for the Southern States. For distribution later.

CHORISIA SPECIOSA. (Bombaceae.) 31874. Seeds of tree cotton from Paraguay. Presented by Mr. C. F. Mead, Vilia Encarnacion, Paraguay. "This is called 'Samuji.' This cotton grows in tree form to a general height of about 20 feet and is a very regular beautifully formed tree. The trunk is straight and very thorny. The cotton is more like silk than cotton. Its yield I can't say, but yesterday I counted over 100 bolls ranging up to three inches in diameter by five inches long and the same tree was again in blossom with thousands of new bolls forming. With its regular dark green foliage and bright reddish flowers, it is a very striking tree in appearance, especially for streets. It is certainly frost resistant to some extent as yesterday morning the thermometer was down to 3° C., with visible frost everywhere, and it didn't even affect the flowers. When the cotton is ripe, the hot sun swells it, breaking the outside skin which

falls to the ground, leaving the boll of cotton, which varies in size from four to eight inches in diameter." (Mead.) As a stuffing for mattresses and pillows this cotton is used in the same way as the "kapok" of the East Indies. For distribution later.

CITRUS AUSTRALIS. (Rutaceae.) 31877. Seeds from Australia. Presented by Mr. James Pink, Wellington Point, near Brisbane, Queensland. "These were got on the range of hills which is the source of the Brisbane River, where in winter they occasionally get 10° to 15° frost in the early morning, but they appear to suffer no harm therefrom." (Pink.) For distribution later.

CLAUCENA LANSIUM. (Rutaceae.) 31730-731. Seeds of the wampee from Canton, China. Received through Mr. C. V. Piper, of this Department. "Both of these varieties were purchased in the market at Canton, where they occur in great abundance at this season (July). The former is an acid variety, the fruit as large as a muscat grape, but tapering to the apex. The latter is sweet, a little smaller and perfectly ellipsoid. Both are greenish yellow in color and normally contain five(?) seeds, but the sour one rarely has more than one seed. The fruit is only of mediocre quality, but the Chinese eat large quantities of it." (Piper.) For distribution later.

COFFEA DEWEVREI. (Rubiaceae.) 31758. Seed of a coffee from Belgian Congo. Presented by the Minister for the Colonies, Brussels, Belgium, at the request of M. Emile de Wildeman, Conservator, Brussels Botanical Gardens. For distribution later.

CORNUS BRETSCHNEIDERI. (Cornaceae.) 31866. Plants of *Cornus* from Rochester, New York. Presented by Mr. John Dunbar, assistant superintendent of parks. This is a very ornamental shrub from the mountains of western China, especially striking in the winter against a background of evergreens because of its bright lemon-yellow twigs. It has proven thoroughly hardy as far north as Rochester, N. Y. For distribution later.

DICHROSTACHYS NUTANS. (Mimosaceae.) 31899. Seeds from South Africa. Presented by Prof. J. Burtt Davy, Government agrostologist and botanist, Pretoria, Natal. "Shrubs or small trees of which the pods are eaten by game and stock, much as is the case with the mesquit of the Southwest. The wood is very hard and durable and is much valued in termite-infested

regions for fencing-posts, in spite of its usually crooked habit of growth. It is known as Sikkel-bosch or Krul-peul. It is native of the warm, dry middle veld, below 4000 feet and is usually found in sandy or gravelly soils in regions where the rainfall is from 20 to 25 inches, falling in summer." (Davy.) For distribution later.

DIOSCOREA SPP. (Dioscoreaceae.) 31914-923. Tubers of twelve varieties of yam from Port Moresby, New Guinea. Presented by Mr. J. A. Hamilton. For distribution later.

ERAGROSTIS ABYSSINICA. (Poaceae.) 31897. Seed of teff grass from the Transvaal, South Africa, at an elevation of 5000 feet. Presented by Prof. J. Burtt Davy, Government agrostologist and botanist, Pretoria, Natal. "This is one of my most valuable introductions into South Africa, and I am anxious that it should receive attention in the southern and southwestern states as a hay-crop. Its great value lies in the rapidity of its growth and maturity(2 to 2½ months), and I have heard of a crop having been grown near Bloemfontein with only four inches of rain. Being sensitive to frost it is only suitable for regions of summer rainfall, which may partly account for the fact that it never 'took' among the farmers of California, where I introduced it many years ago." (Davy.) For distribution later.

EUCLEA RACEMOSA. (Diospyraceae.) 31748. Seeds from Cape Town, South Africa. Presented by Mr. T. F. Dreyer, assistant entomologist, Department of Agriculture, Cape of Good Hope. "A shrub, with dense, dark-green foliage, of distinctly ornamental appearance, which is especially suited for plantings near the sea that are exposed to salt spray, with the purpose of lifting the wind from the surface of the soil and checking the shifting of the sands. In experiments in fixing sand dunes this plant may prove of decided value, not so much through the action of its roots as by the formation of a cover for the sand, which will lift the wind above the surface. Strongly recommended by Prof. MacOwan in his recommendations to the Cape government on the rebushing of an overstocked island off the coast called, 'Robbin Island'." (Fairchild.) For distribution later.

GENISTA SPP. (Fabaceae.) 31904-905. Seeds of mountain broom from Puerto Orotava, Tenerife, Canary Islands. Presented by Mr. George V. Perez. "Two sorts of the famous mountain broom of Tenerife, renowned for its beautiful flowers which are an ideal food for bees. It grows between 7000 and 9000 feet and would do well in the mountains of southern California." (Perez.) For distribution later.

IPOMOEA BATATAS. (Convolvulaceae.) 31908-913. Tubers of six varieties of sweet potato from Tauranga, New Zealand. Presented by Mr. W. C. Berridge, Manager, Experimental Farm, Tauranga. For distribution later.

MANGIFERA INDICA. (Anacardiaceae.) 31732, 31759, 31760, 31763. Seeds and plants of mangos. 31732. From Canton, China. Received through Mr. C. V. Piper of this Bureau. "Hamow. Said to be the best mango grown in South China. A very attractive fruit, but in quality not to be compared to Manila mangos." (Piper.) 31759. "Baramasee" from Sibpur, Calcutta, India. Presented by Major A. T. Gage, Superintendent, Royal Botanic Garden, Calcutta. 31760. "Grenada Ceylon No. 1" from St. George's, Grenada, British West Indies. Purchased from Mr. Gilbert Auchinleck, Superintendent of Agriculture, Grenada. 31763. "Baboony" from Darbhanga, India. Presented by Major A. T. Gage, Royal Botanic Garden, Calcutta. For distribution later.

MELALEUCA LEUCADENDRON. (Myrtaceae.) 31736. Seeds of the cajuput tree from Sydney, New South Wales. Presented by Mr. J. H. Maiden, Director, Sydney Botanic Gardens. "The cajuput tree is a myrtaceous tree closely related to the Eucalyptus. Present indications are that the tree will prove very valuable for avenue planting and windbreaks in Southern Florida. It is a rapid grower and adapts itself readily to different conditions of soils and surroundings. It is able to withstand the effects of salt spray and is not hurt by occasional tidal overflows. Trees set out as small seedlings in 1909 at Cocoanut Grove, Florida, have bloomed and produced seed this season after reaching a height of about 15 to 20 feet." (H. F. Schultz.) For distribution later.

PHORMIUM TENAX. (Liliaceae.) 31884-890. Plants of the New Zealand flax from Wellington, New Zealand. Presented by Mr. T. W. Kirk, Director, Department of Agriculture. Seven varieties introduced for the studies of the Office of Fiber Plant Investigations. For distribution later.

PLATONIA INSIGNIS. (Clusiaceae.) 31872. Seeds from near Caballero, Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion, Paraguay. "In Guarany this is called 'pacuri'. This is very highly recommended as a delicious fruit either fresh or in preserves. Dwarf growth to two meters height. Fruits which are larger than a cherry and nearly black in color, are borne in clusters about the main stalk. Frost resistance equal to that of the orange." (Mead.) For distribution later.

NOTES FROM FOREIGN CORRESPONDENTS.

Mr. C. V. Piper, who is traveling as an agricultural explorer of this office, gives the following description in his letter of July 11, of the water gardens around Canton, which show the remarkable way in which the Chinese utilize their swamp land:

At the western end of the city of Canton is an extensive area of flat swamp lands which have been utilized by the Chinese in a highly developed system of water gardens. The land has been divided in small paddies of an acre or so, usually less, each surrounded by a dyke. These paddies are always covered with water usually one or two feet deep. Five different crops are grown in regular rotation, namely, lotus(*Nelumbium speciosum*), Chekoo(*Sagittaria chinensis*), Kausun(*Zizania*), water chestnut, (*Eleocharis tuberosa?*), and Lingkok(*Trapa bicornis*). A sixth crop also occurs, Ongchog(*Ipomoea reptans*), but this, as I understand, does not enter into rotation, whole paddies or parts of them being devoted constantly to this plant. At the present season (July 10) the principal crops are lotus and Trapa, but these are being harvested and in a few cases the harvest completed. At the edge of most paddies is a row of Kausun or of *Sagittaria* or both, to be used as "seed". As soon as the lotus is harvested the paddy is planted to Kausun. The seed plants of this are now about six feet out of the water. In transplanting this is cut off to two or three feet, the tufts separated into parts of about three culms each, and planted in rows four feet wide, the plants about two feet apart in the rows. One mother plant I had dug up had a single stolon two feet long about as large as a lead pencil, the joints two to three inches long. From the crop now being planted the crop will be obtained in about two months.

Trapa is planted from the seeds in the spring; water chestnuts from the corms in the fall; and *Sagittaria* from the roots also in the fall. Lotus yield both a crop of rootstocks, resembling a string of large sausages, and the pods, both of which are now in the market in abundance. Another variety is grown only for the flowers. This information is the best I could get except in the case of Kausun of which I saw new paddies just planted. Most of the Kausun planting will be in about two weeks.

The dykes between the paddies are often planted to trees, especially loongan and leitchee. On the edges of the dykes one frequently sees taro(*Colocasia*). The Chinese all say the Kausen does not produce seed which is probably true as they cultivate it.

Besides these crops the Chinese secure an abundance of snails and frogs from the paddies. In some there are fish also, but the fish ponds are usually separate as are the duck ponds. On the surface of the paddies is a solid mat of Azolla and 2 species of Lemna which are gathered in great baskets as food for ducks and fishes.

The water and mud of the ponds smell vilely, due no doubt to fertilizers. Indeed at the edge of some paddies or in small special paddies public privies are erected so as to secure "katamorphic human products" as fertilizers.

The gardens are excellently kept and no doubt are very profitable. It certainly is a wonderful way of utilizing what otherwise would be waste land, and indicates one method we might copy in utilizing some of our swamp areas. Indeed it seems to me a swamp experiment station would be well worth while even now.

I saw no mosquitoes and they are said not to be bad, due no doubt to the fishes in the ponds at least in part.

None of the Europeans I asked had ever eaten Kausun, but the Chinese hold it in high esteem. I can give no estimate of the area grown, but if all the lotus is succeeded by Kausun it is very extensive.

This information I think accurate in a general way only, as one would have to observe the gardens a whole year to get them accurate. My brief experience indicates what so many others have said, that no two Chinese tell quite the same story.

CHINA. Mokanshan. Rev. J. M. W. Farnham writes August 26, that Mr. Kennedy, who was with the Agricultural Explorer, Mr. Frank N. Meyer, at the time he collected the persimmons at Tangsi, will collect a considerable quantity of seeds this fall from the wild trees commonly used as stocks, and will send us scions in the spring. Mr. Farnham has resigned from his position with the Tract Society and will have much more time for his interests in things agricultural.

CHINA. Tientsin. Dr. Yamei Kin writes August 14, that she has a quantity of the ordinary lacquer, made from the sap of *Rhus vernicifera*, ready to send, and is expecting to be able soon to report on the white lacquer, which she is experimenting with. This lacquer was requested by this Office for experimental purposes. As to an orange from Shantung, the fruit gets its name from passing through this province from the western provinces, and she has not yet been able to get authentic trace of its origin there.

CHINA. Yachow. Mrs. H. J. Openshaw writes August 6, that she has found that the nan-mu trees are of at least two varieties, and the wood of one is much harder than that of the other, and the graining is also handsomer in one. The *Gordonia sinensis* which we requested she has not been able to find as yet. Chestnuts and barley she is looking out for.

S. P. I. NOS. INCLUDED IN THIS BULLETIN.

31730-731, 31732, 31736, 31748, 31758, 31759, 31760, 31761, 31763, 31835, 31840-841, 31866, 31869, 31872, 31874, 31877, 31880, 31884-890, 31891, 31897, 31898, 31899, 31904-905, 31908-913, 31914-923.



POPULUS PRUINOSA. PRUINOSE POPLAR.

"Desert landscape with old specimens of *Populus pruinosa* in the background and tamarisk mounds in between." From photograph by Mr. Frank N. Meyer, near Kuldicha, Chinese Turkestan, February, 1911. Mr. Meyer further describes this tree: "A species of desert poplar, called 'Thal Tograk'. Occurring in big groves in sandy and alkaline deserts mostly intermixed with *Populus diversifolia* (See next half-tone), to which it bears great resemblance in general habits. The wood is used in the same way as that of *P. diversifolia*, except that as this species in general does not grow so large, one cannot manufacture troughs or barrels from it; it is, however, said that this wood is harder and more lasting. This poplar will be able to stand more intense heat and drought, but slightly less severe cold than *P. diversifolia*." Nos. 30230 and 30921.



POPULUS DIVERSIFOLIA. . . POPLAR.

"A desert poplar (*Populus diversifolia*), which although it does not grow as fast as the Eucalyptus, will stand more cold and alkali." From photograph by Mr. Frank N. Meyer, near Yak-kuduk, Chinese Turkestan, February 19, 1911. Of this poplar Mr. Meyer also says: "They have absorbed so much alkaline matter that when wounded, a strongly alkaline sap oozes out, leaving white crystalline streaks on the trunks. The wood also, when cut, exhibits many crystals. The wood is used by the natives to make water-buckets, troughs and barrels. Recommended as an ornamental park tree and as a tree for fuel in arid and semi-arid regions where the soil is very sandy, or of a strongly alkaline nature, where the summers are intensely hot and dry, but the winters not too cold."